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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Man-Soo Han

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04/05/2005

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EXAMINER

HO, CHUONG T

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/055,454	<b>Applicant(s)</b> HAN ET AL.	
	<b>Examiner</b> CHUONG T HO	<b>Art Unit</b> 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14 is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 3-5 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: ____.  |

1. Claims 1-18 are pending.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Aweya et al. (U.S. Patent No. 6,788,697 B1).

In the claims 1, 15, see figure 1, Aweya et al. discloses a shared buffer (10) switch which has plurality of input ports (12), a plurality of output ports (18), and a shared buffer (10), the system for determining whether or not to store a cell (see col. 6, lines 17-18, a determination is made as to whether a received data packet is dropped or accepted), which is new received through one of the input ports (12), in the shared buffer; comprising:

- Determining a buffer are of the shared buffer in which the newly received cell is stored (see figure 3, col. 6, lines 12-15, lines 39-50, lines 17-18);
- Determining a cell discard threshold (a common threshold) with respect to the total number of cell stored in the shared buffer (10) and the changing rate (see col. 6, lines 61-65, the dynamic buffering scheme allows the system to adapt intelligent to various traffic condition and gives the network manager the ability to

fine tune the network to different traffic characteristics....., controls the rate at which the buffer threshold changes), with respect to time (see col. 6, line 46, after every interval of time units (in seconds), compute), of the total number of the cells (see figure 3, col. 6. ;lines 12-15, lines 39-50, lines 17-18);

- Determining whether or not to store the newly received cell in the shared buffer, by comparing the number of cells stored in the buffer area (a buffer size B) in which the newly received cell is to be stored, with the cell discard threshold (see figure 3, col. 6, lines 12-15, lines 39-50, lines 17-18).

3. In the claim 15, Aweya et al. discloses a shared buffer switch (10) (see figure 1); comprising:

- A plurality of input ports (12) for receiving cells from the outside (see figure 1);
- A shared buffer (10) for storing the cells received through the plurality of input ports (12) (see figure 1);
- A plurality of output ports (18) for transmitting the cells stored in the shared buffer (10) to the outside (see figure 1);
- A partitioner (a buffer management scheme 100) which determines whether or not to store the cells (see col. 6, lines 17-18), which are newly received through one of the input ports (12), in the shared buffer (10) with respect to the total number of cells (a buffer of size B) stored in the shared buffer (10) and the changing rate (see col. 6, lines 61-65, the dynamic buffering scheme allows the system to adapt intelligent to various traffic condition and gives the network manager the ability to fine tune the network to different traffic characteristics.....,

controls the rate at which the buffer threshold changes), with respect to time (every interval of time units (in seconds)), of the total number of the cells (a buffer of size B), and according to the determination. Stores the newly received cells in the shared buffer (10), or discard the newly received cells (see figure 3, col. 6, lines 12-15, lines 39-50, lines 17-18).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 6-8, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aweya et al. (U.S. Patent No. 6,788,697 B1) in view of Bonneau (U.S. Patent No. 6,671,258 B1).

In the claims 2, 16, Aweya et al. discloses the shared buffer switch has cell discard thresholds with respect to the total number of cells stored in the shared buffer and the changing rate, with respect to time, of the total number of the cells (a buffer of size B), and a cell discard threshold is determined by referring to a cell discard threshold corresponding to the total number of cells stored in the shared buffer (10) and the changing rate, with respect to time.

However, Aweya et al. is silent to disclosing the shared buffer switch has a table for storing cell discard thresholds with respect to the total number of cells stored in the shared buffer and the changing rate, with respect to time.

Bonneau discloses the target memory occupancy or threshold, VCT, for a connection j featuring an EOP cell is computed by multiplying the MCR of the connection by a predetermined value selected from a lookup table. Table 2 shows an example of such a pre-determined function in respect of an OC-12 egress port (see col. 16, lines 20-35); comprising:

Bonneau et al. discloses the shared buffer switch has a table for storing cell discard thresholds with respect to the total number of cells stored in the shared buffer and the changing rate, with respect to time (see col. 16, lines 20-35, col. 15, lines 45-50).

Both Aweya and Bonneau discloses the shared buffer switch, thereby reflecting the actual occupancy size of the shared buffer. Bonneau recognizes the shared buffer switch has a table for storing cell discard thresholds with respect to the total number of cells stored in the shared buffer and the changing rate, with respect to time. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Aweya with teaching of Bonneau to provide the table for storing cell discard thresholds with respect to the total number of cells stored in the shared buffer and the changing rate, with respect to time in order to adaptively handle changes in input port traffic and changes in output traffic such that packet drop due to drop is effectively prevented.

5. In the claim 6, Bonneau discloses the shared buffer switch (14) is a common node of a plurality of Virtual Circuit (VCs), and a buffer area for storing a newly received

cell is determined according to a VC in which the newly received cell is included (see col. 9, lines 33-38, col. 10, lines 15-23).

6. In the claims 7, 17, Bonneau discloses each VC has a predetermined service rate, and in step (b) a cell discard threshold is determined with respect to the service rate of a VC in which the newly received cell is included, the total number of cells stored in the shared buffer (14), and the changing rate, with respect to time, of the total number of cells (see col. 9, lines 33-38, col. 10, lines 15-23).

7. In the claims 8, 18, Bonneau discloses the shared buffer switch has a table for storing a cell discard threshold corresponding to the service rate of a VC in which each cell is included, the total number of cells stored in the shared buffer, and the changing rate, with respect to time, of the total number of cells, and a cell discard threshold is determined by referring to a cell discard threshold corresponding to the service rate of a VC in which the newly received cell is included, the total number of cells stored in the shared buffer, and the changing rate, with respect to time, of the total number of cells (see col. 16, lines 20-35, col. 9, lines 33-38, col. 10, lines 15-23).

***Allowable Subject Matter***

8. Claims 10-14 are allowed.

9. The following is an examiner's statement of reasons for allowance: the prior art (6788697, 6671258, 6690645, 6466579, 6650645, 6424622, 20030058802, 6094418, 6671257) of record does not appear to teach or render obvious the claimed limitations in combination with the specific added limitations, as recited from independent claim 10: "determining a cell discard proportionality constant with respect to the total number of

cells stored in the shared buffer and the changing rate, with respect to time, of the total number of the cells; determining a cell discard threshold by multiplying the reference cell discard threshold by the cell discard proportionality constant”.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

10. Claims 3, 4, 5, 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is an examiner’s statement of reasons for allowance: the prior art (6788697, 6671258, 6690645, 6466579, 6650645, 6424622, 20030058802, 6094418, 6671257) of record does not appear to teach or render obvious the claimed limitations in combination with the specific added limitations, as recited from dependent claims 3, 4, 5, 9: “wherein in step (b) interval I in which the total number of cells stored in the share buffer is determined after dividing the maximum number of cells that can be stored in the shared buffer into a plurality of intervals, and a cell discard threshold is determined with respect to interval I and the change rate, with respect time, of the total number of the cells”.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably




accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

04/09/05



**WELLINGTON CHIN**  
**SENIOR PATENT EXAMINER**